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10/031,377	04/12/2002	Mutsumi Suzuki	NITT.0057	9511

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Stanley P Fisher
Reed Smith Hazel & Thomas
Suite 1400
3110 Fairview Park Drive
Falls Church, VA 22042-4503

EXAMINER

NGUYEN, KEVIN M

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/031,377

Applicant(s)

SUZUKI ET AL.

Examiner

Kevin M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This office action is made in response to applicant's argument filed on May 25, 2005. Claims 1 and 11-12 are amended, and claims 1-17 are currently pending in the application. An action follows below:

Drawings

1. Figures 13-15 were received on May 25, 2005. These drawings are acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-12, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sarrasin (IDS cited, US 5,600,343).

3. As to claims 1, 11 and 16 (original), Sarrasin teaches an image display associated with a method, the image display including

- a. a lower wall (a first plate, fig. 1), a plurality of microtip 16 (a plurality of electron-emitter elements, fig. 1), an insulating layer 12, the control circuit 24 supplies voltage +V_c or -V_c.
- b. column electrodes 8 (a base electrode, a plurality of first electrodes, fig. 1)
- c. row electrodes 10 (a top electrode, a plurality of second electrodes, fig. 1),
- d. inherent a frame component.

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- e. an upper wall 4 (a second plate, fig. 1) has a light emitting material 22 (a phosphor).
 - f. a conventional cathodoluminescent inherent includes a space and a vacuum.
 - g. A control circuit 24 (first driving means) supplies driving voltages $+V_c$ or $-V_c$.
 - h. A control circuit 26i (second driving means) supplies driving voltages V_d , V_L s (col. 5, lines 7-10).
 - i. Fig. 2 shows a potential V_d applied throughout the selection time of the row L_{i+1} . Following the discharge of the row L_i , the latter is placed under high impedance (HZ) during the entire non-selection time of the row L_i (col. 5, lines 25-30).
2. As to claims 2, 12 and 17 (original), Sarrasin teaches an image display associated with a method, the image display including
- j. a lower wall (a first plate, fig. 1), a plurality of microtip 16 (a plurality of electron-emitter elements, fig. 1), an insulating layer 12, the control circuit 24 supplies voltage $+V_c$ or $-V_c$.
 - k. column electrodes 8 (a base electrode, a plurality of first electrodes, fig. 1)
 - l. row electrodes 10 (a top electrode, a plurality of second electrodes, fig. 1),
 - m. inherent a frame component.
 - n. a upper wall 4 (a second plate, fig. 1) has a light emitting material 22 (a phosphor).

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- o. a conventional cathodoluminescent inherent includes a space and a vacuum.
 - p. A control circuit 24 (first driving means) supplies driving voltages $+V_c$ or $-V_c$.
 - q. A control circuit 26i (second driving means) supplies driving voltages V_d , V_L s (col. 5, lines 7-10).
 - r. Fig. 2 shows a potential V_d applied throughout the selection time of the row L_i . Following the discharge of the row L_i , the latter is placed under high impedance (HZ) during the entire non-selection time of the row L_i (col. 5, lines 25-30).
 - s. Following the discharge of the row $L_i + 1$, the latter is placed under high impedance (HZ) during the entire non-selection time of the row $L_i + 1$ (col. 5, lines 25-30).
3. As to claims 4 and 14, Sarrasin teaches Fig. 2 shows a potential V_d applied throughout the selection time of the row L_i . Following the discharge of the row L_i , the latter is placed under high impedance (HZ) during the entire non-selection time of the row L_i (col. 5, lines 25-30). Sarrasin reviews the previously selected row passes into a high impedance state HZ and the row potential is then floating (col. 2, lines 25-26).
4. As to claims 5 and 15, Sarrasin teaches Fig. 2 shows a potential V_d applied throughout the selection time of the row $L_i + 1$. Following the discharge of the row $L_i + 1$, the latter is placed under high impedance (HZ) during the entire non-selection time of

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the row Li (col. 5, lines 25-30). Sarrasin reviews the previously selected row passes into a high impedance state HZ and the row potential is then floating (col. 2, lines 25-26).

5. As to claim 6, Sarrasin teaches row electrodes 10 defined a top electrode or a plurality of second electrodes. The row electrodes 8 function as the bus lines.

6. As to claim 7, Sarrasin teaches column electrodes 8 defined a base electrode or a plurality of first electrodes.

7. As to claims 8, 9, Sarrasin teaches column electrodes 8 (the base electrode) carry microtip 16 made from an electron emitting material at the pixels (col. 4, lines 45-46). Thus, column electrodes 8 (the base electrode) function as a metal or semiconductor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrasin.

9. (Original) Sarrasin teaches all the subject matter claimed with the exception of the high impedance is an impedance of 1MΩ or more. Absent a showing of criticality it would have been within the level of skill in the art and obvious to one having ordinary skill to engineering design the range/size of a well-known element is normally not

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directed toward patentable subject matter as desired as was judicially recognized in re Rose, 105 USPQ 237 (CCPA 1955) and in re Reven, 156 USPQ 679 (CCPA 1968).

Response to Arguments

10. Applicant's arguments filed May 25, 2005 have been fully considered but they are not persuasive.

11. In response to applicant's argument that claim 1 recites "a plurality of electron-emitter element each having a structure comprised of a base electrode, an insulating layer and a top electrode stacked on one another in this order, said electron-emitter element emitting electrons from the surface of the top electrode when a voltage polarity is applied to the top electrode." Examiner is not convinced by Applicant's argument. As stated *supra* with respect to claim 1, Examiner finds that Sarrasin teaches a structure of a display device comprising a plurality of microtip 16 (a plurality of electron-emitter elements, fig. 1), an insulating layer 12, the control circuit 24 supplies voltage +V_c or -V_c (a voltage polarity is applied to the top electrode as claimed), column electrodes 8 (a base electrode, a plurality of first electrodes, fig. 1), row electrodes 10 (a top electrode, a plurality of second electrodes, fig. 1). Thus, the teaching of Sarrasin's reference meets limitations of claim 1 above.

12. In response to applicant's argument that claims 16-17 recite "electron-emitter elements each having a structure comprised of a base electrode, an insulating layer and a top electrode stacked on one another in this order" incorporating "thin-film electron emitters each having a base electrode and top electrode." Examiner is not convinced by Applicant's argument. As stated *infra* with respect to claims 16-17, Examiner finds

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that Sarrasin teaches a structure of a display device comprising, see fig. 1, col. 4, lines 40-42.

t. An electrically insulating layer 12 placed between the electrodes 8 and 10 ensures their electrical insulation.

u. An elementary display point or pixel 14 corresponds to each intersection of a row electrode and a column electrode.

v. The column electrodes 8 carry microtips 16 made from an electron emitting material at the pixels. Facing the said microtips 16, the insulating layer 12 and the row electrodes 10 have holes 18 from which the microtips emerge.

Thus, the teaching of Sarrasin's paragraph (t) meets limitations of "a structure comprised of a base electrode, an insulating layer and a top electrode stacked on one another in this order."

One person of ordinary skill in cathodoluminescence of Sarrasin, or Flat CRT or field emission display (FED) art to recognize that are same type of electron emitting device. Cathodoluminescence of Sarrasin includes the column electrodes 8 carry microtips 16 made from an electron emitting material at the pixels. Facing the said microtips 16, the insulating layer 12 and the row electrodes 10 have holes 18 from which the microtips emerge (paragraph "v"). An elementary display point or pixel 14 corresponds to each intersection of a row electrode 10 and a column electrode 8 which are made up the thin electrodes (paragraph "u"). One person of ordinary skill in electron emitter art to understand that a variety of designs such as point emitters also cone, microtip or "Spindt" emitter, thin film wedge emitters, thin film electron emitters are the

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same types. Thus, the column electrodes 8 carry microtips 16 made from an electron emitting material at the pixels are such one type as list above "thin-film electron emitters." Therefore, the structure of cathodoluminescence of Sarrasin is the same the structure of the display device as claimed.

13. Applicant argues that "First of all,..... Sarrasin polarizes elements on two different plates/walls to emit electrons, rather than element (the base electrode 13 and the top electrode 32 in Fig. 8) on the same/first plate as the invention, page 11, 11 last lines. Examiner is not convinced by Applicant's argument. As stated *infra*, Examiner finds that Sarrasin claims "column control circuits (24) for simultaneously applying to the m column electrodes during the first selection time potentials (-Vc, +Vc) for display of data of the row Li, the discharge potential (Vd) being below the smallest potential (-Vc) applied to the column electrodes," see claim 1, lines 47-52. Thus, Sarrasin polarizes the voltages Vd, -Vc, Vls, and Vs that apply to column (top) electrodes and row (base) electrodes as claimed.

14. Applicant argues that "Secondly, Sarrarin's electrons are emitted by a totally different structure which require a much higher potential, i.e., raising the potential of the anode 20 to 200-600 V (col. 4, line 58), rather than by applying the row electrode 310 at -5V and the column electrode 311 at 4.5 V (p. 27, line 21 line 6) as the invention," at page 11, 9 last lines. Examiner is not convinced by Applicant's argument. As stated *supra*, Examiner finds that Sarrasin claims "column control circuits (24) for simultaneously applying to the m column electrodes during the first selection time potentials (-Vc, +Vc) for display of data of the row Li, the discharge potential (Vd) being

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below the smallest potential ($-V_c$) applied to the column electrodes," see claim 1, lines 47-52. As stated *infra*, Examiner finds that "compared with an addressing with imposed row non-selection potential, it can be seen that the row voltage excursion must be large, because it must completely cover the column excursion (i.e. $V_d \leq -V_c$ and $V_{ls} \leq V_s + V_c$, V_s corresponding to an ϵ close to the emission threshold)" (col. 8, lines 15-14). Thus, one person of ordinary skill in the cathodoluminescence art to understand that *the voltages V_d , $-V_c$, V_{ls} , and V_s are a small ϵ values voltage that apply to column electrodes and row electrodes* as claimed. As stated *infra*, Examiner finds that the specification discloses the present embodiment, an acceleration voltage applied to the metal back 122 can be set to a high voltage of 3KV to 4KV at page 26, lines 10-11. Thus, one person of ordinary skill in the cathodoluminescence art to understand that the anode is raised to the highest potential V_A (generally between 200 and 600V) (col. 4, lines 57-58 of Sarrasin) are substantially high voltage to apply to the anode of the electron emitting device.

15. In response to applicant's argument that discussed *supra* at paragraphs 13 and 14, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

For these reasons, the rejections based on Sarrasin have been maintained.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Nguyen whose telephone number is 571-272-7697. The examiner can normally be reached on MON-THU from 8:00-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick N. Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the Patent Application Information Retrieval system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Nguyen
Patent Examiner
Art Unit 2674

KMN
July 30, 2005

A handwritten signature in black ink, appearing to read "Patrick N. Edouard". The signature is fluid and cursive, with a large initial "P" and "E".

PATRICK N. EDOUARD
SUPERVISORY PATENT EXAMINER